# Probing surface properties of Jupiter Trojans by polarimetric observations

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We present the first polarimetric observations of six Jupiter Trojans, namely (588) Achilles, (1583) Antilochus, (3548) Eurybates, (4543) Phoinix, (6545) 1986 $TR_6$, and (21601) 1998 $XO_{89}$. All these objects belong to the L4 population of Jupiter Trojans and have diameters in the range of 50–160 km (Grav et al. 2011). The observations were carried out in 2013 at ESO VLT. Each object was observed at 3–4 different phase angles in the phase-angle range from 7 deg up to 11–12 deg, the largest possible phase angles in the ground-based observations of Trojans. Observations were made in the R band with a typical accuracy of 0.05 %. We have measured negative polarization branch for each object with polarization minima varying from -1 % to -1.3 %. The polarization-phase-angle behavior of the observed Trojans is found to be very similar to that of some low-albedo main-belt asteroids, in particular, the P-type asteroids. We compare photometric and polarimetric phase dependencies of Trojans to the phase curves of inner and outer Solar System bodies. Possible relationships of phase-curve parameters with albedos and spectral properties are investigated. Constraints on the surface properties of Jupiter Trojans from the polarimetric observations are discussed.

**References:** Grav et al. AJ, v.472, id. 40, 2011.